SEQUENCE LISTING

```
<110> ASHTON-RICKARDT, PHILIP G.
       OPFERMAN, JOSEPH T.
       PHILLIPS, TIPHANIE
 <120> INDUCTION OF VIRAL IMMUNITY USING INHIBITORS OF
       GRANZYMES
 <130> ARCD:382US
 <140> UNKNOWN
 <141> 2001-11-14
 <160> 16
<170> PatentIn Ver. 2.1
<210> 1
<211> 1626
<212> DNA
<213> Homo sapiens
<400> 1
gaattccggt gaagttgacc gggtccaccc gaagcttgtg cgcgtgcagg tcgctcaggg 60
cggacgcggc acggagacgg cggcagcctg gactaggtgg caggccctgc atcatggaaa 120
ctctttctaa tgcaagtggt acttttgcca tacgcctttt aaagatactg tgtcaagata 180
accettegea caacgtgtte tgtteteetg tgageatete etetgeeetg gecatggtte 240
tectagggge aaagggaaae acegeaaeee agatggeeea ggeaetgtet ttaaacaeag 300
aggaagacat tcatcgggct ttccagtcgc ttctcactga agtgaacaag gctggcacac 360
agtacctgct gagaacggcc aacaggctct ttggagagaa aacttgtcag ttcctctcaa 420
cgtttaagga atcctgtctt caattctacc atgctgagct gaaggagctt tcctttatca 480
gagctgcaga agagtccagg aaacacatca acacctgggt ctcaaaaaaag accgaaggta 540
aaattgaaga gttgttgccg ggtagctcaa ttgatgcaga aaccaggctg gttcttgtca 600
atgccatcta cttcaaagga aagtggaatg aaccgtttga cgaaacatac acaagggaaa 660
tgccctttaa aataaaccag gaggagcaaa ggccagtgca gatgatgtat caggaggcca 720
cgtttaaget cgcccacgtg ggcgaggtgc gcgcgcagct gctggagctg ccctacgcca 780
ggaaggaget gageetgetg gtgetgetge etgaeggegg egtggagete ageaeggtgg 840
aaaaaagtct cacttttgag aaactcacag cctggaccaa gccagactgt atgaagagta 900
ctgaggttga agttctcctt ccaaaattta aactacaaga ggattatgac atggaatctg 960
tgcttcggca tttggggaatt gttgatgcct tccaacaggg caaggctgac ttgtcggcaa 1020
tgtcagcgga gagagacctg tgtctgtcca agttcgtgca caagagtttt gtggaggtga 1080
atgaagaagg caccgaggca gcggcagcgt cgagctgctt tgtagttgca gagtgctgca 1140
tggaatctgg ccccaggttc tgtgctgacc accetttect tttcttcatc aggcacaaca 1200
gagccaacag cattetgtte tgtggcaggt teteategee ataaagggtg caettacegt 1260
gcactcggcc atttccctct tcctgtgtcc ccagatcccc actacagctc caagaggatg 1320
ggcctagaaa gccaagtgca aagatgaggg cagattcctt acctgtctgc cctcatgatt 1380
tgccagcatg aattcatgat gctccacact cgcttatgct acttaatcag aatcttgaga 1440
aaatagacca taatgattcc ctgttgtatt aaaattgcca tcccccgaat tcccatagga 1500
tggcaagcaa agttetteta gaatteeaca tgcaatteac tetggcgace etgtgettte 1560
ctgacactgc gaatacattc cttaacccgc tgcctcagtg gtaataaatg gtgctagccg 1620
gaattc
                                                                  1626
```

<210> 2

<211> 376

<212> PRT

<213> Homo sapiens

<400> 2

Met Glu Thr Leu Ser Asn Ala Ser Gly Thr Phe Ala Ile Arg Leu Leu 1 5 10 15

Lys Ile Leu Cys Gln Asp Asn Pro Ser His Asn Val Phe Cys Ser Pro 20 25 30

Val Ser Ile Ser Ser Ala Leu Ala Met Val Leu Leu Gly Ala Lys Gly
35 40 45

Asn Thr Ala Thr Gln Met Ala Gln Ala Leu Ser Leu Asn Thr Glu Glu 50 55 60

Asp Ile His Arg Ala Phe Gln Ser Leu Leu Thr Glu Val Asn Lys Ala 65 70 75 80

Gly Thr Gln Tyr Leu Leu Arg Thr Ala Asn Arg Leu Phe Gly Glu Lys 85 90 95

Thr Cys Gln Phe Leu Ser Thr Phe Lys Glu Ser Cys Leu Gln Phe Tyr 100 105 110

His Ala Glu Leu Lys Glu Leu Ser Phe Ile Arg Ala Ala Glu Glu Ser 115 120 125

Arg Lys His Ile Asn Thr Trp Val Ser Lys Lys Thr Glu Gly Lys Ile 130 135 140

Glu Glu Leu Leu Pro Gly Ser Ser Ile Asp Ala Glu Thr Arg Leu Val 145 150 155 160

Leu Val Asn Ala Ile Tyr Phe Lys Gly Lys Trp Asn Glu Pro Phe Asp 165 170 175

Glu Thr Tyr Thr Arg Glu Met Pro Phe Lys Ile Asn Gln Glu Glu Gln
180 185 190

Arg Pro Val Gln Met Met Tyr Gln Glu Ala Thr Phe Lys Leu Ala His 195 200 205

Val Gly Glu Val Arg Ala Gln Leu Leu Glu Leu Pro Tyr Ala Arg Lys 210 215 220

Glu Leu Ser Leu Leu Val Leu Leu Pro Asp Asp Gly Val Glu Leu Ser 225 230 235 240

Thr Val Glu Lys Ser Leu Thr Phe Glu Lys Leu Thr Ala Trp Thr Lys 245 250 255

Pro Asp Cys Met Lys Ser Thr Glu Val Glu Val Leu Leu Pro Lys Phe 260 265 270

```
Lys Leu Gln Glu Asp Tyr Asp Met Glu Ser Val Leu Arg His Leu Gly
                             280
Ile Val Asp Ala Phe Gln Gln Gly Lys Ala Asp Leu Ser Ala Met Ser
    290
                         295
                                             300
Ala Glu Arg Asp Leu Cys Leu Ser Lys Phe Val His Lys Ser Phe Val
305
                     310
                                         315
Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ser Ser Cys Phe
                 325
                                     330
Val Val Ala Glu Cys Cys Met Glu Ser Gly Pro Arg Phe Cys Ala Asp
            340
                                 345
His Pro Phe Leu Phe Phe Ile Arg His Asn Arg Ala Asn Ser Ile Leu
                            360
                                                 365
Phe Cys Gly Arg Phe Ser Ser Pro
                        375
<210> 3
<211> 1819
<212> DNA
<213> Mus musculus
<400> 3
gaattccggg ctggattgag aagccgcaac tgtgactctg catcatgaat actctgtctg 60
aaggaaatgg cacctttgcc atccatcttt tgaagatgct atgtcaaagc aacccttcca 120
aaaatgtatg ttattctcct gcgagcatct cctctgctct agctatggtt ctcttgggtg 180
caaagggaca gacggcagtc cagatatctc aggcacttgg tttgaataaa gaggaaggca 240
tccatcaggg tttccagttg cttctcagga agctgaacaa gccagacaga aagtactctc 300
ttagagtggc caacaggctc tttgcagaca aaacttgtga agtcctccaa acctttaagg 360
agtcctctct tcacttctat gactcagaga tggagcagct ctcctttgct gaagaagcag 420
aggtgtccag gcaacacata aacacatggg tctccaaaca aactgaaggt aaaattccag 480
agttgttgtc aggtggctcc gtcgattcag aaaccaggct ggttctcatc aatgccttat 540
attttaaagg aaagtggcat caaccattta acaaagagta cacaatggac atgcccttta 600
aaataaacaa ggatgagaaa aggccagtgc agatgatgtg tcgtgaagac acatataacc 660
tegeetatgt gaaggaggtg caggegeaag tgetggtgat gecatatgaa ggaatggage 720
tgagcttggt ggttctgctc ccagatgagg gtgtggacct cagcaaggtg gaaaacaatc 780
tcacttttga gaagttaaca gcctggatgg aagcagattt tatgaagagc actgatgttg 840
aggttttcct tccaaaattt aaactccaag aggattatga catggagtct ctgtttcagc 900
gcttgggagt ggtggatgtc ttccaagagg acaaggctga cttatcagga atgtctccag 960
agagaaacct gtgtgtgtcc aagtttgttc accagagtgt agtggagatc aatgaggaag 1020
gcacagaggc tgcagcagcc tctgccatca tagaattttg ctgtgcctct tctgtcccaa 1080
cattetgtge tgaccaccce tteetttet teatcaggea caacaaagea aacageatee 1140
tgttctgtgg caggttctca tctccataaa gacacatata ctacacaggg agagttctct 1200
cttcagtatc cctaccactc ctacagctct gtcaagatgg gcaagtaggg ggaagtcatg 1260
ttctaagatg aagacacttt ccttctctgt cagcctgatc ttataatgcc tgcattcaac 1320
tctccctgtc ttgaatgcat ctatgccctt taccaggtta tgtctaatga tgccaaatac 1380
cttctgctat gctattgatt gatagcctag ccagtaattt atagccagtt agaactgact 1440
tgactgtgca agaatgctat aatggagcta gagagaaggc acaaacacta ggaaaggttg 1500
ctgtttttgc agaggacaca gggacatttc ccaccactca catggctgct tacaacctct 1560
```

ggaaattcca gtttctgtcc atgacttgat tcctttcttt ggcttctact ggctccagca 1620 tcctgcacat acatgtatcg tcattcagtt acacacaaac aagtaaaatt ttaaaaataa 1680 ataaaaattt aagagagag tctaaaattt tagtaatggt tagataatag ctgctattgt 1740 gccttttca ggttttaatg tcattattct tgtgtataaa gtcaataatt tataggaaaa 1800 catcagtgcc ccggaattc 1819

<210> 4

<211> 374

<212> PRT

<213> Mus musculus

<400> 4

Met Asn Thr Leu Ser Glu Gly Asn Gly Thr Phe Ala Ile His Leu Leu 1 5 10 15

Lys Met Leu Cys Gln Ser Asn Pro Ser Lys Asn Val Cys Tyr Ser Pro
20 25 30

Ala Ser Ile Ser Ser Ala Leu Ala Met Val Leu Leu Gly Ala Lys Gly
35 40 45

Gln Thr Ala Val Gln Ile Ser Gln Ala Leu Gly Leu Asn Lys Glu Glu
50 55 60

Gly Ile His Gln Gly Phe Gln Leu Leu Leu Arg Lys Leu Asn Lys Pro 65 70 75 80

Asp Arg Lys Tyr Ser Leu Arg Val Ala Asn Arg Leu Phe Ala Asp Lys
85 90 95

Thr Cys Glu Val Leu Gln Thr Phe Lys Glu Ser Ser Leu His Phe Tyr 100 105 110

Asp Ser Glu Met Glu Gln Leu Ser Phe Ala Glu Glu Ala Glu Val Ser 115 120 125

Arg Gln His Ile Asn Thr Trp Val Ser Lys Gln Thr Glu Gly Lys Ile 130 135 140

Pro Glu Leu Leu Ser Gly Gly Ser Val Asp Ser Glu Thr Arg Leu Val 145 150 155 160

Leu Ile Asn Ala Leu Tyr Phe Lys Gly Lys Trp His Gln Pro Phe Asn 165 170 175

Lys Glu Tyr Thr Met Asp Met Pro Phe Lys Ile Asn Lys Asp Glu Lys 180 185 190

Arg Pro Val Gln Met Met Cys Arg Glu Asp Thr Tyr Asn Leu Ala Tyr 195 200 205

Val Lys Glu Val Gln Ala Gln Val Leu Val Met Pro Tyr Glu Gly Met 210 215 220

Glu Leu Ser Leu Val Val Leu Leu Pro Asp Glu Gly Val Asp Leu Ser 225 230 235 240

Lys Val Glu Asn Asn Leu Thr Phe Glu Lys Leu Thr Ala Trp Met Glu 245 250 255

Ala Asp Phe Met Lys Ser Thr Asp Val Glu Val Phe Leu Pro Lys Phe 260 265 270

Lys Leu Gln Glu Asp Tyr Asp Met Glu Ser Leu Phe Gln Arg Leu Gly 275 280 285

Val Val Asp Val Phe Gln Glu Asp Lys Ala Asp Leu Ser Gly Met Ser 290 295 300

Pro Glu Arg Asn Leu Cys Val Ser Lys Phe Val His Gln Ser Val Val 305 310 315 320

Glu Ile Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala Ser Ala Ile Ile 325 330 335

Glu Phe Cys Cys Ala Ser Ser Val Pro Thr Phe Cys Ala Asp His Pro 340 345 350

Phe Leu Phe Phe Ile Arg His Asn Lys Ala Asn Ser Ile Leu Phe Cys 355 360 365

Gly Arg Phe Ser Ser Pro 370

<210> 5

<211> 9

<212> PRT

<213> Mus musculus

<400> 5

Phe Gln Pro Gln Asn Gly Gln Phe Ile

<210> 6

<211> 9

<212> PRT

<213> Mus musculus

<400> 6

Lys Ala Val Tyr Asn Phe Ala Thr Met

<210> 7

<211> 11

```
<212> PRT
 <213> Mus musculus
 <400> 7
 Ser Gly Val Glu Asn Pro Gly Gly Tyr Cys Leu
 <210> 8
 <211> 31
 <212> DNA
 <213> Mus musculus
 <400> 8
gaattccggg ctggattgag aagccggata c
                                                                     31
<210> 9
<211> 18
<212> DNA
<213> Mus musculus
<400> 9
tgaagagaga actctccc
                                                                     18
<210> 10
<211> 22
<212> DNA
<213> Mus musculus
<400> 10
gccatccatc ttttgaagat gc
                                                                     22
<210> 11
<211> 21
<212> DNA
<213> Mus musculus
<400> 11
tgcacccaag agaaccatag c
                                                                     21
<210> 12
<211> 34
<212> DNA
<213> Mus musculus
<400> 12
tccaaaaatg tatgttattc tcctgcgagc atct
                                                                    34
<210> 13
<211> 24
```

ij
ı,
1,1
Ħ
in.
į saita
i sak
u Šira Šira
127
į.

The state of the s

<212> DNA <213> Mus musculus	
<400> 13 ccatcaaacc attccttctg tage	24
<210> 14 <211> 23 <212> DNA	
<213> Mus musculus <400> 14	
agcagagatt acaggacatt gcg	23
<210> 15 <211> 25 <212> DNA <213> Mus musculus	
<400> 15 caggagagcg tecetacece atetg	25
<210> 16 <211> 19 <212> PRT <213> Mus musculus	
<pre><400> 16 Gly Thr Glu Ala Ala Ala Ser Ser Cys Phe Val Ala Glu Cys Cys Met</pre>	
Glu Ser Gly	